REMARKS

Claims 1, 4, 10, 13, 18, and 22 have been amended in a manner to believe to overcome the present rejection for the reasons to be described hereinafter

More particularly, independent claims 1, 10, and 18 (and thus their dependent claims) have been amended to recite "A machine vision" system, rather than "An Imaging" system. An imaging system is quite generic in that it refers to a system that gives information about the setup, whereas a machine vision system implies human intelligence has been incorporated into the system. A machine vision system more clearly recites applicant's invention and is supported, in part, on page 7 of the originally filed Specification.

Further, claims 1, 10, and 18 have been amended to delete the terms "operating programs" and replace with machine vision techniques. This more clearly recites applicant's invention and is supported in on page 7 on the originally filed Specification.

Further, as will be further described with reference to the rejections, claims 1, 10, and 18 have been amended to recite machine vision techniques...for autonomously scanning..., "said machine vision techniques including routines for adaptive neural networks that operatively control said robotic system." The adverb autonomously is supported, in part, on page 7 of the originally filed application, whereas the techniques for adaptive neural networks is supported, in part, on pages 11 and 12 of the originally

filed Specification. Accordingly, these amendments to claims 1, 10, and 18 (to be further discussed with reference to the rejections) should not be considered new matter.

Claims 6 and 15 have been cancelled because the subject matter has been respectively incorporated into claims 1 and 10.

Before discussing the rejections of the present section, a brief review of applicant's invention is in order.

Applicant provides a Compact Microscope Imaging System (CMIS) having machine vision techniques for autonomously scanning, identifying, detecting, tracking, and analyzing microscope specimens for selected characteristics or features. The CMIS provides intelligence to allow experiments to be conducted without the need of constant or even human monitoring and thus, is considered to operate autonomously..

As discussed on page 12 of applicant's specification, the practice of the invention uses machine vision routines or techniques and creates a relational database of the features identified by the humans. These features serve as a baseline input feature set and are used to train/teach the adapted neural networks preferably used in the practice of the invention. The practice of the invention develops a machine vision technique that is used to identify an input feature set, but also has an ability to learn how to adapt to various changing inputs to produce an optimum output. The overall effect of the practice of the present invention is that experiments that used to take weeks or even months to analyze

manually can now be accomplished in a manner of minutes or hours for longer experiments.

Claims 1, 3-10, 12-18, and 20-23 stand rejected under 35 USC §102(b) as being anticipated by Grenwald et al (U.S. Patent 6,330,106B1). Applicant has amended claims 1, 4, 10, 13, 18, and 22 in a manner believed to overcome these rejections for the reasons given hereinbelow.

Claims 1, 10, and 18 have been amended to recite a computer...having operating programs comprising machine vision techniques..., said machine vision techniques having routines for adaptive neural networks that operatively control said robotic system.

Claims 4, 13, and 22 have been amended to recite said machine vision techniques for adaptive neural networks also control positioning of said video microscope, which, in turn, controls positioning of said camera. Grenwald et al are devoid of any discussion of any neural network, particularly any adaptive neural network for operatively controlling a robotic system.

The Examiner, with reference to claims 6 and 15 (now cancelled) regarding neural networks, and claims 4, 13, and 22 regarding controlling robotic systems, refers to Grenwald et al Fig. 1, and column 6, lines 1-14. More particularly, the Examiner appears to be referring to Grenwald et al user controls 64, which may provide signals for actuating drive motors or other actuators in the translation mechanisms which selects the

section to be imaged and can scan the section. The teaching of Grenwald et al regarding user controls 64, are devoid of any teaching of any neural networks, and more particularly, of any teaching of "machine vision techniques including routines for adaptive neural networks that operatively control said robotic system."

Greenwald et al uses a confocal microscope system, which is not compatible with conventional microscope systems, such as related to the present invention. More particularly, Greenwald et al's confocal microscopy, use a special lens that has to be immersed in solution in order to generate an image. Furthermore, Greenwald et al desired laser-based scanning system is unlike that of the present invention recited in applicant's claims 2 and 11.

The sample or specimens in Greenwald et al need to be specially prepared with the tissue samples having to match the index of refraction of the liquid in which it is contained in order to generate an acceptable image, which is not that of applicant's invention. The system of Greenwald et al is restricted to tissue sample analysis in solution, which limitation is not found in the present invention. More particularly, the present invention does not require the use of a confocal microscope, nor do the specimens have to be submersed in an index of refraction matched solution to be analyzed.

The machine vision system recited in independent claims 1, 10 and 18 uses autonomous adaptive neural network techniques for its examination. The present invention does not require human intervention and, therefore, is autonomous.

Nothing within the four corners of Grenwald et al suffering the drawbacks of being a conformed microscope system and, more particularly being devoid of adaptive neural networks anticipates, teaches, or suggests the subject matter of independent claims 1, 10, and 18, nor of dependent claims 14, 13, and 22.

For the reasons given hereinabove, it is respectfully solicited that the 35 USC §102(b) rejection of claims 1, 10, and 18 and claims 4, 13, and 22 be withdrawn and that these claims be found allowable.

Claims 4-9, 12-17, and 20-23 are dependent upon either independent claims 1, 10, or 18, and thus in the context of these independent claims recite further details of applicant's invention. These dependent claims are considered patentably distinguishable over Grenwald et al for the reasons given for their independent claims.

For the reasons given hereinabove, it is respectfully solicited that the 35 USC §102(b) rejection of claims 4-9, 12-17, and 20-23 be withdrawn and that these claims be found allowable.

Claims 2, 11, and 19 stand rejected under 35 USC §103(a) as being unpatentable over Grenwald et al in view of Knebel et al (U.S. Patent 6,388,804B1). Applicant respectfully disagrees with this rejection for the reasons given hereinbelow.

Knebel et al disclose the use of conformal laser scanning microscope, similar to Greenwald et al with its inherent drawback. However, more particularly, Knebel et al do not fill the void of Grenwald et al in that Knebel et al do not disclose nor suggest applicant's invention recited in independent claims 1, 10, and 18 as "said machine vision techniques including routines for adaptive neural networks that operatively control said robotic system."

Assuming for the sake of discussion, that the references of Grenwald et al and Knebel et al are combinable, even though neither reference makes such a suggestion, the resulting combination would still be devoid of applicant's recited invention of claims 1, 10, and 18 as "said machine vision techniques including routines for adaptive neural networks that operatively control said robotic system."

Claims 2, 11, and 19 are respectively dependent on independent claims 1, 10, and 18, and thus in the context of the independent claims recite further details of applicant's invention. These claims are considered patentably distinguishable for the reasons given for their independent claims.

For the reasons given hereinabove, it is respectively solicited that the rejection of 35 USC §103(a) of claims 2, 11, and 19 be withdrawn and that these claims be found allowable.

Claims 24-26, and 33 stand rejected under 35 USC §103(a) as being unpatentable over Grenwald et al in view of Abdel-Fattah (U.S. 2004/0218798). Applicant respectfully disagrees with this rejection for the reasons given hereinbelow.

Abdel-Fattah et al disclose a video microscopic visualization system and imaging processing and data extraction, as well as processing methods for in situ detailed quantification of depositions of sub-micrometer particles.

Abdel-Fattah et al do mention colloids related to the subject matter of applicant's claims 24-36 and 33, but Abdel-Fattah et al do not autonomously detect the interface shape of a colloidal hard spheres suspension experiment, via the use of adaptive neural network techniques or routines.

Unlike the present invention, Abdel-Fattah et al are limited to objects that the human cannot visualize, while the present invention can examine specimens that are visual to the average human eye.

Abdel-Fattah et al also deal with colloid deposition and aggregation kinetics (non-visual), which is not that of the present invention which deals with finding the interface shape of the colloidal suspension, as well as the orientation of the interface shape (visual).

In a manner similar to Knebel et al, Abdel-Fattah et al do not fill the void of Grenwald et al. More particularly, Abdel-Fattah et al do not disclose or suggest applicant's independent claims 1, 10, and 18 reciting "said machine vision techniques including routines for adaptive neural networks that operatively control said robotic system."

Assuming for the sake of discussion that the Examiner's references of Grenwald et al and Abdel-Fattah et al are combinable, even though neither reference makes such a suggestion, the resulting combination would still be devoid of applicant's invention recited in independent claims 1, 10, and 18 as "said machine vision techniques including routines for adaptive neural networks that operatively control said robotic system."

Claims 24-26, and 33 are directly or indirectly dependent on applicant's independent claims, and thus in the context of applicant's independent claims recite further details of applicant's invention. Applicant's dependent claims 24-26, and 33 are considered patentably distinguishable over the cited references for the reasons given for applicant's independent claims.

For the reasons given hereinabove, it is respectfully solicited that the 35 USC §103(a) rejection of claims 24-26, and 33 be withdrawn and that these claims be found allowable.

In summary, it is believed that claims 1-5, 7-14, and 16-26, as well as claim 33, are in condition for allowance and such allowance is respectfully solicited.

Respectfully submitted

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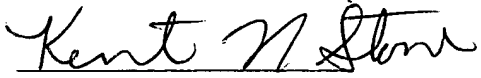

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